

Template for ISB Documentation of Stressors

A. General Information:

1. Name or Location of Example/Approach: Marine

2. Literature/Citations Used: Stelzenmuller, V., J. Lee, A. South, S.I. Rogers 2010. Quantifying cumulative impacts of human pressures on the marine environment: A geospatial modelling framework. Marine Ecology Progress Series 398:19-32

3. Reviewer(s): V. Resh

B. Specific Questions:

1. What stressors are considered? oil and gas development, fishing, cables, pipelines, extraction, dumping, other

2. Are stressors categorized? If so, how? generic pressure categories

3. Are the relations between stressors and management objectives modeled, and if so, how? This paper reviews general models in terms of spatial distribution and intensity of impact, with linear, equal and logistic decreases). All scenarios indicated similar locations with increased risk of cumulative impact. Logistic weighting was sensitive to the importance and ranking of stressors.

4. If stressors are prioritized, describe the general approach. Generic human pressure categories were assigned in 6 layers—in terms of intensity and footprint to produce fuzzy sets of pressure layers. This was then related to the sensitivity of the landscapes examined and then different scenarios were modeled.

5. How might this approach be relevant to Bay Delta? I like that this approach looks at the spatial component of effects in terms of the sensitivity of the different areas (which is certainly the case in the Sacramento R. delta). Is appropriate GIS information available?

6. Follow up regarding additional questions/literature review/etc? Literature cited section of paper lists other GIS based approaches that may be applicable